

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES

DISTRICT H

# COAL FATAL

REPORT OF FATAL BUMP ACCIDENT  
SUNNYSIDE NO. 2 MINE  
KAISER STEEL CORPORATION  
SUNNYSIDE, CARBON COUNTY, UTAH

Injured: January 29, 1960  
Died: May 4, 1960

By

Joe Freeman  
Coal-Mine Inspector

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Originating Office - Bureau of Mines  
1600 East First South, Salt Lake City 12, Utah  
L. D. Knill, Subdistrict Supervisor  
Salt Lake City, Utah, Subdistrict, Health and Safety  
District H

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### INTRODUCTION

Dave Baird, age 41, helper on a mobile-loading machine, received a fractured skull and severe head and face lacerations about 12:45 p.m., Friday, January 29, 1960, while installing yieldable steel arches in the face area of No. 3 right inby working section. His head struck the bits on the elevated cutterbar of a 10-RU mining machine when he was knocked down by falling coal and rock dislodged from the face when a bump occurred. He was hospitalized from the day of injury, excepting for March 10 which day he spent at home, until the time of death at 10:40 p.m., Wednesday, May 4, 1960. He had 19 years mining experience and worked 2 years as a helper on a mobile-loading machine. He is survived by his widow and three dependent children.

The writer was notified of the accident about 3:45 p.m. on January 29 by a telephone call from L. D. Knill, subdistrict supervisor, Salt Lake City, Utah, who had been notified by John Peperakis, manager of Sunnyside mines. Inasmuch as the area involved was to remain idle over the weekend the investigation was made on Saturday, January 30.

### GENERAL INFORMATION

The Sunnyside No. 2 mine, Kaiser Steel Corporation, is situated at Sunnyside, Carbon County, Utah on State Highway No. 123 and is served by a branch line of the Denver & Rio Grande Western Railroad.

The mine, opened by two drifts and five raises, was developed in the Upper and Lower Sunnyside coal beds, which average  $4\frac{1}{2}$  and 10 feet in thickness, respectively, and dip about 6 degrees northeasterly. A total of 275 men was employed, of which number 205 worked underground on 3 shifts a day and 70 worked in the shop on the surface on 2 shifts. Coal was produced two shifts a day, 4 and 5 days a week. The average daily production of 1,676 tons of coal was loaded with ripper-type continuous miners and mobile-loading machines. The mine has a long productive life.

The mine was developed by a room-and-pillar method and pillars were recovered by the splitting and open-end method. Entries, 16 feet wide, were driven in pairs and sets of three. Rooms were driven 18 feet wide on 80-foot centers and crosscuts were driven at 80-foot intervals. Entries on the left side of the main slope were driven a distance of 4,000 feet to interconnect the Water Canyon bleeder slopes which were extended to the surface, and entries turned off the right side of the main slopes were driven about 8,200 feet to interconnect the Columbia Canyon bleeder slopes which extended to the surface also. Entries on the right side of the slopes intersected partially mined areas which had been worked many years ago.

The immediate roof overlying the Upper Sunnyside coal bed consisted of a sandy shale ranging from a feather edge to 10 feet in thickness and the main roof was sandstone. A band of shale ranging from 1 to 15 feet in thickness separated the two coal beds. The cover over the coal beds ranges from 500 to 2,500 feet in thickness, much of which is massive sandstone that exerts excessive pressure upon the coal beds to the extent that severe bumps frequently occur. An extensive program of installing yieldable steel arches on 2- and 3-foot centers was in progress at various places throughout the mine. The voids around the arches on the main slopes were filled with minus  $\frac{1}{4}$ -inch material by the sluicing method and the voids around the arches in other sections were filled with heavy lagging, such as props. This method of roof and rib support is being

Blue  
Support  
Kiewit  
parts

installed to try and counteract the violent bumps that occur frequently in this mine. As of January 29, 1960, a total of 9,641 yieldable steel arches had been installed in this mine covering an area of approximately 26,710 lineal feet. A plant to be used for sluicing back-fill material into the Sunnyside mines was under construction on the surface. Other methods of roof support adopted and used in this mine consisted of erecting cribs, setting crossbars, installing large diameter props on each side of the roadways, and installing roof bolts 6 to 10 feet in length equipped with steel bearing plates and metal airplane landing mats. The roof bolts were installed in compliance with a plan approved by the Bureau of Mines.

The mine is classed gassy in accordance with the laws of the State.

Details concerning this accident are shown in the sketch.

The names and titles of the eye witnesses who furnished information are:

Frank Markosek  
Allen Price  
Raymond Borgeson

Superintendent  
Helper on cutting machine  
Cutting machine operator

The investigating committee was comprised of:

Kaiser Steel Corporation

Frank Markosek	Superintendent
Van Alger	Day mine foreman
Julius Maki	Night mine foreman
Joseph T. Taylor	Mining Engineer
Clarence E. Self	Safety Engineer.

United Mine Workers of America

Isaiah Parry	Safety committeeman
Melvin Heath	Safety committeeman

Industrial Commission of Utah

L. L. Arnett	Coal-mine inspector
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Bureau of Mines

Joe Freeman	Coal-mine inspector
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The last previous inspection of this mine, prior to the accident, was made on November 17-20, 1959.

DESCRIPTION OF THE ACCIDENT

On the day of the accident Frank Markosek, superintendent and Van Alger, mine foreman were making their daily examinations of the mine. About 10:40 a.m. while Markosek was standing on a ripper-type continuous mining machine examining the face area in the outby No. 3 right section, a severe bump occurred and hurled him at least 25 feet, but he was uninjured. At 12:20 p.m. and 12:24 p.m., while Alger was examining the Columbia bleeder he heard two heavy bumps in the abandoned area between the bleeder entry and the No. 3 right section. The workmen in the inby No. 3 right section stated that two light bumps occurred in their section while they were eating lunch a short time before the accident. As the inby end of No. 3 right entry advanced it was supported by 16-foot, 21 pounds per foot, yieldable steel arches placed on 3-foot centers with timbers used as lagging in the walls around the arches. The entry had

winches used as lagging in the voids around the arches. The entry had intersected the abandoned "I" haulage entry and it was decided to install additional roof support in this intersection; hence, 1-inch wedge-type roof bolts, 8 feet in length equipped with metal airplane landing mats and 8- by 8-by 3/8-inch steel bearing plates were installed. The bolts were spaced not more than 4 feet apart. After the roof bolts were installed, work of advancing the steel arches across the intersection was continued.

Friday, January 29, Allen Price, Reid Wilson, Raymond Borgeson, and Dave Baird were completing the installation of steel arches across the intersection. The arches had been installed up to the high rib of the old "I" haulage entry which was to be the face of the No. 3 right entry and all the arches had been secured except the one nearest the face. At 12:45 p.m. Markosek entered the area being arched and found Ray Borgeson at the controls of the 10-RU cutting machine, Allen Price standing on the raised cutterbar (cutter chain locked securely) installing the left top spreader between the two arches nearest the face, Reid Wilson and Dave Baird in the face area gathering the necessary clamps and "J" bolts to complete the installation. Markosek had just greeted Borgeson when he felt a tremor in the floor and at the same instant he and Wilson saw the coal and rock from the face begin to fall. They called a warning to Baird but before he could get in the clear he was knocked down by the falling coal and rock. His head hit the cutter-chain bits on the raised bar of the cutting machine, lacerating his head and face severely and

fracturing his skull. The superintendent and crew immediately went to his aid and found the lower part of his left leg trapped by a piece of rock. He was given first-aid, loaded into a heated ambulance car, transported to the surface where a doctor was waiting and taken to the Utah Permanente Hospital at Dragerton, Utah. He died in the Utah Valley Hospital at Provo, Utah about 10:40 p.m., Wednesday, May 4, 1960 from meningitis, a complication resulting from his injuries.

The deceased was confined to the Utah Permanente Hospital, Dragerton, Utah January 29 to February 18, April 8-9, April 11-15; at his home in Price, Utah, April 10; Holy Cross Hospital, Salt Lake City, Utah February 18 to April 8; Utah State Hospital, Provo, Utah April 15 to April 28; Utah Valley Hospital, Provo, Utah April 28 to May 4.

The bump was not heard as the motor on the cutting machine was in operation. The face consisted of about 4 feet of soft, sandy-shale cap rock, 5 feet of coal and 3 feet of bottom rock. The fall was estimated to be about 5 tons of which mostly was cap rock broken into small pieces. There were no indications that an overhang had been present at the face, and Allen Price stated that he had sounded the face a short time before the accident and found it firm.

#### CAUSE OF ACCIDENT

This accident was caused by a bump dislodging coal and cap rock from the face. Bumps of this type are one of the unsolved problems of coal mining; therefore, at this time there are no recommendations that can be offered to prevent accidents of a similar nature. However, it is recognized that much effort is being put forth in this mine to minimize the hazards of bumps.



ACKNOWLEDGMENT

The cooperation of the Industrial Commission of Utah, company officials, employees and union officials is gratefully acknowledged.

Respectfully submitted,

/s/ Joe Freeman

Joe Freeman  
Coal-Mine Inspector

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